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## **Knowledge on Prevention of Mother to Child Transmission of HIV among Pregnant Women of Damak**

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### **Abstract**

*The goal of the global intervention is to stop the spread of HIV from an HIV-positive mother to her unborn child during pregnancy, birth, or breastfeeding. A significant issue with world health is HIV. In comparison to other age groups, the prevalence of HIV is highest among those who are in reproductive age groups globally. The main method of HIV transmission among children is now mother-to-child transmission.. The main objective of the study is to assess the level of Knowledge on the Prevention of Mother-Child Transmission among Pregnant Women at Damak Hospital. This descriptive cross-sectional study was carried out in the ANC clinic of Damak Hospital from June 2 to June 15 in 2019. A complete enumerative sampling technique was used. The total sample size was 80. All the required information was collected through the interview schedule. The interview was taken by an investigator oneself in a face-to-face interview with the pregnant woman. Among 80 respondents, the mean age of the respondent was 25.84 years of which 42.5% were Primigravida and 57.5% of the respondents were Multigravida. Similarly, 37.5% of respondents had higher education and above. Most (76.3%) of respondents mentioned books as the major source of information. Among the studied respondent, 8.8% of the respondents have good knowledge, 58.8% have moderate knowledge and 32.4% have poor knowledge of PMTCT. The level of knowledge was statistically associated with occupation*

*(p=0.04) whereas the level of knowledge was not associated with other socio-demographic variables: age groups, gravida. In this study, respondents have a moderate level of knowledge on the prevention of mother-to-child transmission and the level of knowledge was statistically associated with the occupation of respondents.*

*Keywords:* PMTCT, knowledge, pregnant women., breastfeeding

## **Introduction**

HIV during pregnancy is feared because women with HIV/AIDS transmit the illness to their children while they are pregnant, giving birth, and breastfeeding. However, by starting antiretroviral treatment (ART) as soon as possible for newborns and before, throughout, and after pregnancy in HIV-positive women, the risk of mother-to-child transmission may be reduced (APA, 2019).

Approximately 36.9 million people worldwide were living with HIV/AIDS, of whom 1.8 million were children (under 15 years old). In 2017 80% of HIV-positive pregnant women sought antiretroviral prescriptions to prevent mother-to-child transmission (Africa Health Organization [AHO], 2019). The HIV epidemic in South and Southeast Asia continues to be largely driven by drug users, males who have sex with other men, and sex workers' clients and their direct partners. Migrants are vulnerable, and migrants returning from India make up 41% of the sick in Nepal and 67% of the infected in Bangladesh (Pendse et al., 2016).

The prevention of mother-to-child transmission (PMTCT) should be made available before conception as well as during pregnancy, labor, and breastfeeding. Without any treatment, the rate of transfer from mother to child ranges from 15% to 45%. By giving lifetime antiretroviral therapy (ART), regardless of CD4 count, this rate can be brought down to below 5% during pregnancy, labor, delivery, and breastfeeding (World Health Organization [WHO] 2019).

Ninety percent of the projected newly HIV-infected infants in the African region were thought to have acquired the virus from mother-to-child transmission (MTCT) in 2017. There were 1.4 million HIV-positive pregnant women worldwide in 2017, and it is believed that 80% of them were taking ARVs to prevent HIV from being passed from mother to child (PMTCT). In comparison to other regions, coverage of ARV drugs among pregnant women is highest in Africa (81%), followed by the Americas (77%), Western Pacific (77%), and South-East Asia (53%) (WHO, 2017). The majority of the HIV epidemic in Nepal occurs in the Most At Risk

Populations (MARPs), including female sex workers (FSW), drug users, transgender people, and some migrants to high-risk areas in India. The major populations (IDUs, MSM, FSWs, male labor migrants, and clients of FSWs) account for about 58% of HIV infections among adults (The World Bank, 2012). All 77 of Nepal's districts now offer the community-based PMTCT (CB-PMTCT) program, which includes HIV testing and counseling for every ANC visitor at the medical facilities. In Nepal, there are 304 mothers who need PMTCT, and 192 (63%) of all pregnant HIV-positive women received antiretroviral therapy to lower their risk of MTCT in 2017 (Department of Health Service [DOHS], 2017). A study done in Paropakar Maternity and Women's Hospital was found that Prevalence of HIV infection among antenatal attendees was 0.11 % and 0.13% in hospital deliveries. Migrant worker spouse (44.2%) was the main source of infection in their wives (Shrestha et al., 2012).

Through a combination of antiretroviral medication, elective cesarean section, breastfeeding cessation, and formula milk supplementation in developed nations, mother to child HIV transmission can be eliminated and reduced to less than 2%. The top priority identified for meeting the PMTCT targets is strengthening the connection between family planning, maternity, sexual, and reproductive health services and PMTCT services in healthcare facilities. Increasing pregnant women's knowledge of PMTCT is the most economical strategy (Abteew et al., 2016). The HIV Prevalence in Nepal is 0.17% and 81% are in reproductive age group (15-49 years) whereas the percentage of HIV positivity yield among pregnant women is high in Province 1,2,3 and 4 i.e. 0.05%, 0.05%, 0.04% and 0.04% respectively (DOHS, 2017). Only 47% of women and 51% of men know that HIV can be transmitted during pregnancy, during delivery, and by breastfeeding where as 44% of women and 36% of men know that the risk of can be reduced by the mother taking special drugs (Ministry of Health and Population [MOHP], 2017). It shows that knowledge of mother-to-child transmission is still low in both men and women and comparatively it shows less knowledge in women than in males.

The study done in South Africa showed that 41.7% had poor knowledge, 48.1% had moderate knowledge and 10.2% had good level of knowledge (Haghdoost, 2015). Mother-to-child transmission of HIV is increasing due to a lack of knowledge of mothers of the risk of MTCT, and the benefits of preventive interventions, such as prophylactic ARV drugs and infant feeding options (Abajobir & Zeleke, 2013). Mother to Child transmission has been the global burden; creating awareness can decrease its burden.

## Methods and Materials

A cross-sectional descriptive study was conducted to assess the knowledge on prevention of mother to child transmission of Human Immune Deficiency virus among pregnant women of a ANC clinic of Damak Hospital from June 2 to June 15 in 2019. It was upgraded from Damak PHC to Damak Hospital since 2073 B.S. It is 15 bedded government hospital of Nepal. The total number of ANC visit was approximately 30-40 daily. Study population was eighty newly registered pregnant women before PMTCT counseling attending ANC clinic of Damak Hospital. Non-probability purposive sampling method was used during research period for the selection of research setting and complete enumeration sampling method was used for the study population. The self-developed semi-structured interview schedule was used. Tools were divided into 2 distinct parts which are as follows: Socio-demographic information and Knowledge on the Prevention of Mother to Child Transmission of HIV. The validity of the tool was maintained by logical analysis, reviewing with peer groups by extensive literature. Mother to Child transmission has been the global burden; creating awareness can decrease its burdens review & consulting with subject expertise. Before conducting the study, approval was taken from the Department of Research review of Biratnagar Nursing Campus, Biratnagar. Permission was taken from the concerned hospital administration. Written informed consent was taken from each respondent. Data processing was done by using computer Statistical Package for the Social Sciences (SPSS) 20. Descriptive statistics that is frequency, percentage and median was used to assess the level of knowledge on PMTCT among pregnant mother. Chi-square test was used for finding association between knowledge and independent variables.

## Results and Discussion

In this study 37.5% of the respondents were between age group of 20-24 years. Mean age of the respondent was 25.84 years with standard deviation of 5. Similarly, 37.5% were had higher secondary and above and only 5% were illiterate. 77.5% of the respondents were homemaker. 57.5% of the respondents were multigravida and 42.5% were primigravida. 97.5% of the respondents were not participated in previous PMTCT counseling.

It was resulted that most of the (72.5%) respondents gave answer that HIV is caused by HIV virus. 91.13% of the respondents knew that HIV infection transmitted from infected blood transfusion and unprotected sexual intercourse. Similarly, 91.3% of the respondents knew use of blood only after HIV screening and 87.5% of the respondents knew safer sex as preventive

measures. Majority (68%) respondents knew that HIV transmitted from mother to child. Similarly, 85% of the respondents knew that HIV can be transmitted from mother to child during pregnancy.

About knowledge on HIV testing and antiretroviral, 82.5% of the respondents knew necessity of HIV test during pregnancy. Almost all (95.5%) respondents knew first ANC visit as correct time of HIV test in pregnancy. 70% of the respondents did not hear about Anti-retroviral therapy. 33.33% of the respondents knew Anti-retroviral therapy available free of cost in Nepal. Similarly, 37.5% of the respondents knew availability of Anti-retroviral therapy in Jhapa district. Regarding knowledge on PMTCT counseling, 91.3% of the respondents knew necessity of PMTCT counseling and more than half (59.5%) respondents knew that both husband and wife should be involve in PMTCT counseling. Majority (98.8%) of the respondents were know Institutional delivery for HIV positive women. 87.5% of the respondents were known about taking drugs during pregnancy. 28.8% of the respondents knew HIV positive mothers should breastfeed. Twenty percent of the respondents knew exclusive breastfeeding for 6months with ART prophylaxis prevent HIV transmission. Almost (97.5%) respondents knew that HIV positive women need support.

Regarding level of Knowledge on PMTCT, 8.8% of the respondents have good knowledge, 58.8% have moderate knowledge and 32.4% have poor knowledge on PMTCT. The finding revealed that level of knowledge is associated with occupation (p=0.04). Chi square test was used for identifying association between level of knowledge and socio-demographic variables.

**Table 1**

*Socio-Demographic Profile of Respondent's*

n=80

<b>Variables</b>	<b>Frequency (F)</b>	<b>Percentage (%)</b>
<b>Age(in completed year)</b>		
≤19	8	10
20-24	30	37.5
25-29	22	27.5
30-34	15	18.8
≥35	5	6.3
Mean ± SD (25.84±5)		

<b>Educational status</b>		
Illiterate	4	5
Primary level	20	25
Secondary level	26	32.5
Higher secondary $\leq$	30	37.5
<b>Occupation</b>		
Homemaker	62	77.5
Business	9	11.3
Service	3	5
Agriculture	7	6.2
<b>Gravida</b>		
Primigravida	34	42.5
Multigravida	46	57.5
<b>Previous exposure to PMTCT counseling</b>		
Yes	2	2.5
No	78	97.5

**Table 2**

*Knowledge on HIV Infection and mother to child transmission*

n= 80		
Variables	Frequency (f)	Percentage (%)
<b>Meaning of HIV infection</b>		
Caused by virus	58	72.5
Caused by bacteria, virus, protozoa	22	27.5
<b>Mode of HIV infection transmissions(*)</b>		
Unsafe sexual intercourse	73	91.3
HIV infected blood transfusion	73	91.3
Infected mother to child transmission	52	65.5
HIV infected instruments sharing	46	60
<b>Preventive Measures (*)</b>		

Use of blood only after screening for HIV	73	91.3
Early treatment of sexually transmitted disease	56	60.7
Safe sex	70	87.5
Use of sterilized needle and syringe	48	60
Immunization	22	27.5
<b>HIV transmitted from a mother to her baby</b>		
Yes	68	85
No	12	15
<b>If yes, timing of HIV transmission from mother to her baby(*)</b>		
During pregnancy	58	85
During breastfeeding	36	52.9
During delivery	24	35.3

(\*) – Multiple response questions, each response is considered 100%.

**Table 3**

*Knowledge on HIV test and Antiretroviral Therapy*

Variables	Frequency(f)	n=80
		Percentage (%)
<b>Necessity of HIV test during pregnancy</b>		
Yes	66	82.5
No	14	17.5
<b>If yes, timing of HIV test in pregnancy(n=66)</b>		
First ANC visit	63	95.5
Second, Third and Fourth ANC visit	3	4.5
<b>Heard about the availability of Anti retroviral therapy</b>		
Yes	24	30

No	56	70
<b>Availability of Anti retroviral therapy free of cost in Nepal (n=24)</b>		
Yes	8	33.33
No	16	66.67
<b>Availability of Anti retroviral therapy in Jhapa district(n=24)</b>		
Yes	9	37.5
No	15	62.5

**Table 4**

*Knowledge on PMTCT counseling*

Variables	Frequency (f)	n=80
		Percentage (%)
<b>Necessity of PMTCT counseling</b>		
Yes	73	91.3
No	7	8.7
<b>Participants of PMTCT counseling (n=73)</b>		
Family members	28	37.8
Both husband and wife	44	59.5
Pregnant women only	2	3.7
<b>Availability of PMTCT counseling in health facilities(n=73)</b>		
Yes	43	58.9
No	30	41.1



**Table 5**

*Knowledge on Prevention of Mother to child Transmission*

n=80

<b>Variables</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
<b>Favourable place for the delivery of HIV positive mother</b>		
Institutional	79	98.8
Home	1	1.2
<b>Action to prevent transmission of HIV to an unborn baby(*)</b>		
Take drugs soon diagnosed as HIV positive pregnancy	70	87.5
Take drugs during delivery	24	30
Have caesarean section delivery by 38weeks	16	20
<b>HIV positive mothers should breastfeed their babies</b>		
Yes	23	28.8
No	57	71.2
<b>Considerations taken while breastfeeding by an HIV positive mother to her baby to reduce the risk of HIV transmission(*)</b>		
Exclusive breastfeeding for 6months with prophylaxis to baby and ART to mother	16	20
Avoid baby mouth sore	9	11.2
Avoid cracked and sore nipple	9	11.2
Avoid mixed feeding to baby	3	3.8
<b>Necessity of Support to HIV positive women</b>		
Yes	78	97.5
No	2	2.5

(\*) – Multiple response questions, each response is considered 100%.

**Table 6**

*Association between level of Knowledge and Selected Demographic variables*

n=80

Variables	Level of knowledge			p-value
	Poor f (%)	Moderate f (%)	Good f (%)	
<b>Age group</b>				
≤24	11(13.8)	24(30)	3(3.8)	0.75
≥25	15(18.8)	23(28.8)	4(5)	
<b>Gravida</b>				
Primigravida	10(12.5)	20(25)	4(5)	0.67
Multigravida	16(20)	27(33.8)	3(3.8)	
<b>Occupation</b>				
Homemaker	26(32.5)	31(38.8)	5(6.2)	0.04*
Employed**	0(0)	16(20)	2(2.5)	

\*association *p* value < 0.05 employed\*\* business, service, agriculture

In this study mean age of the respondent was 25.84 years which was similar to the findings of the study done in Nepal, in which mean age of the respondent was 27.4 years (Acharya et al., 2018). This study showed that more than half (58.2%) respondents were multigravida and 42.5% were primigravida which is supported by study the conducted in South Africa which showed that 62.5% respondents were Multigravida and 37.5% were Primigravida (Haghdoost, 2015). Similarly another study conducted in Bhopal, India which showed that 51.6% respondents were Multigravida and 48.4% were Primigravida (Parmar et al., 2016). This study showed more than half (77.5%) of respondents were homemakers and 22.5% respondents were employed which is contradicted by the study conducted in Ethiopia which showed that 55.2% were homemaker and 44.8% were employed (Asefa & Beyene, 2013). This study revealed that 37.5% of respondents had education level higher secondary and above which is similar to the study conducted in Manipur, India which showed that 38.9% respondents were had education level higher secondary and above (Devi et al., 2013). Similarly, 5% of the respondents were illiterate and 95% of the respondents were literate which is supported by the

study conducted in India which showed that 4.66% were illiterate and 95.34% were literate (Bhalge, 2012). This may be due to similar setting.

This study presented half of the respondents (75.9%) mentioned school/college curriculum as major source of information which is supported by the study conducted in India which revealed 53.7% respondents school teacher as major source of information (Pandey, 2013).

The study revealed that HIV/AIDS is caused by virus 73.8% which is contradict in a local clinic Mafikeng, South Africa which showed that 44% respondents said HIV/AIDS is caused by Virus. This may be due to higher level of education status of respondents in current study (Useh et al., 2013).

The present study showed that majority (85%) respondents knew about mother to child transmission of HIV which is supported by the study conducted in Karimanagar, India in which majority (82.5%) respondents were aware of mother to child transmission Many of the respondents in present study perceived that MTCT of HIV may occur during pregnancy (85.3%), during labour (35.3%) and during breastfeeding (52.9%), which is supported by the study conducted in Karimanagar, India which showed that during pregnancy (88%), during labour (41.4%) and during breastfeeding (39.5%)(Devi et al., 2013).

Similarly, the current study revealed that most of the (82.5%) respondents knew about HIV testing during pregnancy which is similar with the study conducted in Thapathali which showed almost all (100%) respondents knew about HIV testing (Acharya et al., 2018). The present study showed that 24% of the respondents knew about ART which is contradicted with the study conducted in Thapathali which showed that more than half (54%) knew about ART. This contradiction may due to study conducted in different setting (Acharya et al., 2018). This study showed that 8.8% have good knowledge, 58.8% have moderate knowledge and 32.4% have poor knowledge which is contradicted by the study conducted in Iran, which showed that 5.6% have good knowledge, 12.6% have moderate knowledge and 81.6% have poor knowledge (Tarahomi et al., 2010).

The present study showed that majority (87.5%) respondents knew ART in pregnancy, 30% knew ART during labour and 20% knew caesarean section delivery as method of preventing mother to child transmission which is contradicted by the study conducted in Surat, India which showed that 17% knew ART during pregnancy, 11% knew ART during delivery and

6.2% knew caesarean section as method of preventing mother to child transmission (Patel & Nayak, 2010).

Similarly, the present study showed that level of knowledge is statistically associated with occupation ( $p= 0.04$ ) which is supported by the study conducted in Ethiopia which showed that level of education is associated with occupation ( $P < 0.001$ ) whereas age and gravida of respondents are not associated with level of knowledge (Luba et al, 2017&Alemu et al., 2018).

### Conclusion

The finding of the study concludes that respondents have moderate level of knowledge on prevention of mother to child transmission of HIV and level of knowledge was statistically associated with occupation of respondents. Further comparative study between different hospital (private and public) of Nepal can be conducted. Interventional studies can be conducted to increase the level of knowledge. Strengthen mass media campaigns to improve the knowledge of people towards the PMTCT program.

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